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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,822	03/26/2004	Gary Palmer	85404-132 ADB	7826

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CANADA

EXAMINER	
LAWRENCE JR, FRANK M	

ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,822	PALMER, GARY	
	Examiner	Art Unit	
	Frank M. Lawrence	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12,14,15 and 18-21 is/are rejected.

7)☒ Claim(s) 13,16 and 17 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/671,664.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on September 27, 2002. It is noted, however, that applicant has not filed a certified copy of the Canadian application as required by 35 U.S.C. 119(b).

Specification

2. The disclosure is objected to because of the following informalities: In line 5 of claim 5, the extra period "." should be removed. In line 6 of claim 16, "aportion" should be separated. In lines 12-14 of page 42 and lines 5-8 of page 43, references to specific claims should be removed because the claims can be canceled, amended, and renumbered during prosecution.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 is indefinite because of the phrase "it is desired." It is unclear whether any limitations are being added to the parent claim.

5. Claim 14 recites the limitation "the amine" in line 3. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 18 recites the limitation "the lean amine" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Double Patenting

7. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

8. Claims 1-8 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 2-9 of copending Application No. 10/671,664. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claim 21 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 9 of copending Application No. 10/671,664. Although the conflicting claims are not identical, they are not patentably distinct from each other because one having ordinary skill in the art would have known that the two different pressures used in the co-pending application can be routinely optimized to achieve a

higher rate of absorption of hydrogen sulfide and that a liquid pump is commonly used to increase the pressure of a flowing liquid so that it can reach its intended destination.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter et al. (4,406,868).

13. Carter et al. '868 teach a process for selectively absorbing hydrogen sulfide from a gas stream containing hydrogen sulfide, carbon dioxide, and a product gas, comprising counter-currently contacting the gas stream (94) with an MDEA absorbent from the bottom of a staged, constant pressure column (2), creating a rich absorbent containing hydrogen sulfide and carbon dioxide (26) and a sweetened product gas (96), passing the rich absorbent to a regeneration stripper (16) to produce a lean absorbent (40) that is recycled back to the absorption column (2), and passing a stripped gas product (61) having an increased ratio of hydrogen sulfide to carbon dioxide to a different absorption column or to a mid-point of the absorption column to increase the hydrogen sulfide loading of the absorbent (abstract, figure, col. 2, lines 38-59, col. 3, lines 24-54, col. 4, line 29 to col. 6, line 23, claims 1, 9, 11). The mid-point is selected to lessen the detrimental effect of a high CO2:H2S ratio on overall absorber H2S removal efficiency.

14. Claims 1-11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by the Great Britain reference (GB 1,551,692).

15. GB '692 teaches a process for selectively absorbing hydrogen sulfide from a gas stream containing hydrogen sulfide, carbon dioxide, and a product gas, comprising a first embodiment including counter-currently contacting the gas stream (1) with an MDEA absorbent from the bottom of a staged column (2) at a pressure of 20 bar, creating a rich absorbent (4) containing hydrogen sulfide and carbon dioxide and a sweetened product gas (3), passing the rich absorbent to a regeneration stripper (5) to produce a lean absorbent (16) that is recycled back to the absorption column (2), passing a portion of a stripped gas product (12) having an increased ratio of hydrogen sulfide to carbon dioxide to a second absorption column (13) operating at a pressure of 1.1 bar, contacting the gas in the second absorption column with a second feed of lean MDEA (18), passing a portion of gas (19) from the second absorption column back to a mid-point of the first absorption column to increase the H2S:CO2 ratio in gas (6) being fed to a Claus process (8) (figure 1, p. 3, lines 32-45, p. 4, line 57, p. 4, line 123 to p. 5, line 105). A second embodiment includes counter-currently contacting the gas stream (101) with the absorbent at a mid-point of an absorber (102) to generate a rich absorbent (104) and a sweetened product gas (103), regenerating the rich absorbent in a stripper (105), recycling the regenerated lean absorbent (117) back to the top of the absorber, and directing a portion of the recovered sour gas (112) back to the bottom of the absorber to increase the H2S:CO2 ratio (figure 2).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 12, 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '692 in view of Smith (3,435,590).

18. GB '692 discloses all of the limitations of the claims except that a flash drum is used upstream of the regenerator, a plurality of lean absorbent feed points are used in the towers, and a pump is used to pressurize the absorbent from the second tower to the regenerator. Smith '590 discloses a process for removing carbon dioxide and hydrogen sulfide from a product gas, comprising contacting the gas mixture in an absorber (2) having multiple lean absorbent feed points (3, 4), flashing a produced rich absorbent stream (12) in drums upstream of a regenerator column (41), an using pumps (P-1 to P-5) to pressurize liquid absorbent flowing between the treatment units (figures, col. 2, lines 15-29). It would have been obvious to one having ordinary skill to modify the process of GB '692 by using liquid pumps in order to provide the necessary pressure to overcome natural system pressure drops, to use flash drums upstream of the regenerator to take advantage of sour gas that can be released by a simple pressure letdown, avoiding the need for steam and energy expenditure to strip those gases in a stripper column, and to use a plurality of absorbent feeds to improve the level of absorption of sour gases from the product stream.

19. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB '692 in view of Gazzi et al. (4,591,370).

20. GB '692 discloses all of the limitations of the claim except that side coolers are used on the absorbers. Gazzi et al. '370 disclose a process for removing acid gases from a product

stream, comprising contacting the stream in an absorber having a side cooler (7) (figures 1, 2, col. 5, lines 32-52). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of GB '692 by including side coolers on the absorbers in order to increase absorption kinetics by lowering the average absorption temperature.

Allowable Subject Matter

21. Claims 13, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. Claims 18 and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references listed on the attached PTO-892 form disclose sour gas removal processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank M. Lawrence
Primary Examiner
Art Unit 1724

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Frank Lawrence
7-15-05